Amendments to the Specification

Please replace the fourth paragraph on page 6, lines 9-10, with the following amended paragraph:

In a further aspect of this [[embodimetn]] embodiment R_1 and R_2 are saturated or unsaturated C_{10}-C_{18} alkyl groups.

Please replace the fourth paragraph on page 9, lines 18-19, with the following amended paragraph:

In other compounds, [[R5]] R_5 is selected from the group consisting of monosaccharides, disaccharides, and polysaccharides.

Please replace the last paragraph on page 21, lines 32-35, with the following amended paragraph:

wherein if n is 1, and m is 2 to 6, and R_1 and R_2 separately or together are C_1-C_{23} alkyl or C(O)-C_1-C_{23}, and [[R3 and R4]] R_3 and R_4 separately or together are H or unbranched alkyl C_1-C_6, and R_5 is NH-R_6-R_7 then R_6-R_7 is not $-(CH_2)_zNH_2$ where z is 2-6; or $-(CH_2)_3$-NH-$(CH_2)_4NH_2$; or –NH-$(CH_2)_3$-NH-$(CH_2)_4$-$NH(CH_2)_3NH_2$, C(O)-fluorescein, or

Please replace the third paragraph on page 32, line 46, with the following amended paragraph:

In a preferred embodiment of this structure, n=1-2. In another preferred embodiment, m=2-4. In a further preferred embodiment, k=0-4. Preferentially, [[R3-10]] $\underline{R_{3\text{-}10}}$, if alkyl, are [[C10-15]] $\underline{C_{10\text{-}15}}$.

Please replace the fifth paragraph on page 32, lines 27-35, with the following amended paragraph:

wherein [[R1, R2, R3 and R4]] $\underline{R_1, R_2, R_3, \text{ and } R_4}$ are independently linear or branched, unsubstituted or substituted $C_{1\text{-}23}$ alkyl, acyl, alkylene or heteroalkyl groups having from 0 to 6 sites of unsaturation, cyclic and aryl groups, and containing from 0 to 5 heteroatoms wherein said heteroatoms are not the first atoms in said groups, the substituent groups selected from $-O-(CH_2)_k-CH_3$, $-S-(CH_2)_k-CH_3$, $X-(CH_2)_k-$, wherein X is a halide, and $-N-((CH_2)_k-CH_3)_2$, wherein the alkyl groups contain from 0 to 2 heteroatoms; n is 1 to 6; m is 2 to 10; and [[R5]] $\underline{R_5}$ is a chemical structure having functional groups that define a species of formula 2. [[R5]] $\underline{R_5}$ is preferably linked to the ammonium nitrogen through an alkyl linker, which can also contain heteroatoms.

Please replace the last paragraph on page 34, lines 32-35 (and continuing with the first 3 lines on page 35), with the following amended paragraph:

[[R1 and R2]] $\underline{R_1 \text{ and } R_2}$ are independently H, linear or branched, unsubstituted or substituted $C_{1\text{-}23}$ alkyl, acyl, alkylene or heteroalkyl groups having from 0 to 6 sites of

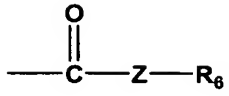
unsaturation, cyclic and aryl groups, said groups comprising from 0 to 5 heteroatoms wherein said heteroatoms are not the first atoms in said gropus, wherein the substituent groups are selected from $-O-(CH_2)_k-CH_3$, $-S-(CH_2)_k-CH_3$, $X-(CH_2)_k-$, wherein X is a halide, and $-N-((CH_2)_k-CH_3)_2$, wherein the alkyl groups comprise from 0 to 2 heteroatoms and k is 0 to 4.

Please replace the first full paragraph on page 35, lines 4-10, with the following amended paragraph:

[[R3 and R4]] $\underline{R_3 \text{ and } R_4}$ are independently H, linear or branched, unsubstituted or substituted C_{1-23} alkyl, alkylene or heteroalkyl groups having from 0 to 6 sites of unsaturation, cyclic and aryl groups, said groups comprising from 0 to 5 heteroatoms wherein said heteroatoms are not the first atoms in said gropus, wherein the substituent groups are selected from $-O-(CH_2)_k-CH_3$, $-S-(CH_2)_k-CH_3$, $X-(CH_2)_k-$, wherein X is a halide, and $-N-((CH_2)_k-CH_3)_2$, wherein the alkyl groups of said substituents comprise from 0 to 2 heteroatoms and k is 0-4;

Please delete the second full paragraph on page 35, lines 13-29, with the following amended paragraph:

[[R5]] $\underline{R_5}$ has the structure



wherein Z is selected from the group consisting of I, S, NR_1, NH, Se, and [[CR7R8]] CR_7R_8;

[[R6]] R_6 is selected from the group consisting of absent, H, [[R1, R2, R3 and R4]] R_1, R_2, R_3 and R_4;

n is 1 to 6;

m is 1 to 10;

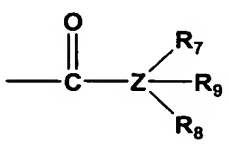
Y is a pharmaceutically acceptable anion; and

[[R7 and R8]] R_7 and R_8 independently or in combination are H or alkyl groups as defined for [[R1 and R2]] R_1 and R_2;

wherein if Z is O, n is 1, and m is 3, then [[R6]] R_6 is selected from the group defined for [[R3 and R4]] R_3 and R_4 and wherein R_1 and R_2 are not both H.

Please replace the first paragraph on page 36, lines 15-26, with the following amended paragraph:

and when Z is C, [[R5]] R_5 has the structure



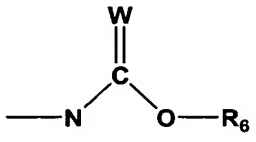
wherein [[R_7, R_8 and R_9]] R7, R8, and R9 are independently H or are selected from the group defined for [[R1, R2, R3 and R4]] R_1, R_2, R_3 and R_4.

Please replace the second paragraph on page 36, lines 27-29, with the following amended paragraph:

In all members of this species [[R6, R7, R8 and R9]] R_6, R_7, R_8 and R_9 optionally further comprises a chemically linked amino acid, peptide, polypeptide, protein, nucleic acid, nucleotide, polynucleotide, mono-, di- or polysaccharide, or other bioactive or pharmaceutical agent.

Please replace the first full paragraph on page 38, lines 5-24, with the following amended paragraph:

The carbonyl cationic lipids of the invention also include those having the isomeric carbamyl structure wherein [[R5]] R_5 has the structure



wherein W is as defined above, [[R6]] R_6 is as defined for the carboxy species and [[R7]] R_7 is absent, or is H or an alkyl group as defined for the carboxy species. Preferred embodiments of the carbamate cytofectins comprise methyl carbamate gropus attached to the lipid through alkyl linkers $(CH_2)_m$ wherein m is 2 to 4.

Please replace the second full paragraph on page 38, lines 25-30, with the following amended paragraph:

In other preferred embodiments [[R1 and R2]] $\underline{R_1 \text{ and } R_2}$ are saturated or unsaturated C_{10}-C_{18} alkyl groups. In still further preferred embodiments, [[R1 and R2]] $\underline{R_1 \text{ and } R_2}$ are identical and are selected from the group consisting of $C_{14}H_{29}$ and $C_{12}H_{25}$. In other preferred embodiments, [[R3 and R4]] $\underline{R_3 \text{ and } R_4}$ are selected from the group consisting of C_1-C_5 alkyl groups and C_1 to C_5 heteroalkyl groups having one heteroatom therein. In other preferred embodiments [[R3 and R4]] $\underline{R_3 \text{ and } R_4}$ are methyl.

Please replace the last paragraph on page 39, line 32, with the following amended paragraph:

wherein [[R5]] $\underline{R_5}$ has the structure

Please replace the paragraph at page 40, lines 25-28, with the following amended paragraph:

One species of the cationic lipids of the invention of this class thus has the general structure of formula 1 and is characterized by the presence of a ureyl group in the substituent on the ammonium nitrogen of formula 1. In this species [[R5]] $\underline{R_5}$ has the structure as defined above wherein W is oxygen.

Please replace the last paragraph at page 40, lines 30-33, with the following amended paragraph:

Another species of cationic lipids of the invention according to this class are characterized by the presence of a guanidyl group in a substituent of the ammonium group nitrogen of formula 1 and have the general structure of formula 1 wherein [[R5]] $\underline{R_5}$ has the structure as defined above wherein W is N or NH.

Please replace the first paragraph at page 41, lines 1-3, with the following amended paragraph:

The cationic lipids of the invention also include compounds having the general structure of formula 1 wherein [[R5]] $\underline{R_5}$ has the structure as defined above wherein W is S or Se.

Please replace the second paragraph at page 41, lines 5-8, with the following amended paragraph:

The cationic lipids of the invention also include compounds having the general structure of formula 1 wherein [[R5]] $\underline{R_5}$ is as defined above wherein W is C, CH, [[CHR1]] $\underline{CHR_1}$, or [[CR1R2]], $\underline{CR_1R_2}$ wherein [[R1 and R2]], $\underline{R_1 \text{ and } R_2}$ are as defined for formula 1; [[R6, R7 and R8]] $\underline{R_6, R_7, \text{ and } R_8}$ are selected from the group defined for [[R1, R2, R3 and R4]] $\underline{R_1, R_2, R_3 \text{ and } R_4}$.

Please replace the paragraph at page 45, lines 17-20, with the following amended paragraph:

wherein if Z is NH and n is 1 and m is 2 to 6, and [[R1 and R2]], $\underline{R_1 \text{ and } R_2}$ separately or together are C_1-C_{23} alkyl or C(O)-C_1-C_{23}, and [[R3 and R4]], $\underline{R_3 \text{ and } R_4}$ separately or together are H or unbranched alkyl C_1-C_6, then [[R5]], $\underline{R5}$ is not [[-$(CH_2)_zNH2$]] $\underline{-(CH_2)_zNH_2}$ where z is 2-6; or –$(CH_2)_3$-NH-$(CH_2)_4$-NH_2; or –NH-$(CH_2)_3$-NH-$(CH_2)_4$-NH$(CH_2)_3$-NH_2, C(O)-fluorescein, or

Please replace the paragraph at page 47, lines 15-20, with the following amended paragraph:

Preferably, R_1 and R_2 are saturated or unsaturated C_{10}-C_{18} alkyl groups. In another embodiment R_1 and R_2 are identical and are selected from the group consisting of $C_{14}H_{29}$ and $C_{12}H_{25}$. In a further embodiment, R_3 and R_4 are selected from the group consisting of C_1-C_5 alkyl groups and C_1-C_5 heteroalkyl groups having one heteroatom therein. In yet another embodiment, R_3 and R_4 are methyl groups. In an additional embodiment, [[X1 and X2]], $\underline{X_1 \text{ and } X_2}$ are NR_4R_5 and R_4 and R_5 are H. In another embodiment, n and m are 2-5.

Please replace the paragraph at page 62, lines 22-25, with the following amended paragraph:

The cationic lipids used were the DLRIE series (n=2-6) and the DOAP series wherein the alkyl chain has either 10, 12 or 14 carbon atoms. The DOAP series corresponds to formula 2 in which [[R1=R2=unbranched]] $\underline{R_1=R_2=\text{unbranched}}$ alkyl chain, n=1, [[R3=R4=CH_3]] $\underline{R_3=R_4=CH_3}$, m=3, G=N and [[R5-H]] $\underline{R_5=H}$.